

REMARKS

Claims 8, 11, 13-14, and 16-19 were presented and examined. Applicants respectfully request reconsideration of the pending claims in view of the following remarks.

I. Claim Rejections Under 35 U.S.C. §103

Claims 8, 11, 13, 14, 16, and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,949,901 to Nichani et al. ("Nichani") and U.S. Patent 5,982,920 to Tobin, Jr., ("Tobin"), and further in view of JP 10-170-450 to Oguma ("Oguma"). **Claims 17 and 18** are rejected under 35 U.S.C. §103(a) as being unpatentable over Nichani, Tobin, and Oguma, and further in view of U.S. Patent 5,461,417 to White, et al. ("White"). Applicant respectfully traverses the rejections.

Regarding Claim 8, Claim 8 recites:

1. An impurity measuring device comprising:
 - a table on which a metal sample having a fracture surface is mounted with said fracture surface facing up;
 - a reflection dome disposed over said table and having a downward concave reflection surface of a substantially semicircular section with an opening in the vicinity of a vertex thereof;
 - a plurality of light sources which are mounted along an inner edge of said concave reflection surface of said reflection dome so as to emit light toward said reflection dome;
 - an imaging means, disposed over said opening of said reflection dome, for sensing an image of the fracture surface irradiated with the light;
 - a continuous tone color image processing means for processing the sensed image into a continuous tone color image; and
 - binarizing means for binarizing the continuous tone color image through comparison between a result of the continuous tone color image processing and a threshold value. (Emphasis added.)

While Applicant's argument here is directed to the cited combination of references, it is necessary to first consider their individual teachings, in order to ascertain what combination (if any) could be made from them.

Nichani teaches a machine vision method for inspection of semiconductor devices. As correctly recognized by the Examiner, Nichani fails to teach detecting inclusions in a metal sample comprising aluminum. As a result, the Examiner cites Tobin. We respectfully disagree with the Examiner's assertions and characterizations concerning Tobin.

Tobin teaches a method for performing automated spatial signature analysis of a data set. According to the Examiner, Tobin (at col. 7, lines 1-15) teaches a process that takes data from a "light-scattering system" ... to detect defects including inclusions within aluminum. However, no disclosure or teaching of the underlined passage is found in Tobin at any place, including the location indicated by the Examiner. The Examiner also recognizes that Nichani and Tobin fail to teach using a reflective dome for scattered light for defect detection. As a result, the Examiner cites Oguma. Oguma teaches an illuminating mechanism. Further, the Examiner observes that Oguma teaches in its Abstract an image sensing means ... for sensing an image of the fracture surface irradiated with the light. However, no disclosure or teaching of the above-underlined passage is found in Oguma.

We submit that none of the cited references teaches detecting non-metallic inclusions in a fracture surface, with minute irregularities, of a sample of aluminum. The Examiner has failed to identify, and we are unable to discern, any portion of the cited references that teaches detecting non-metallic inclusions in a fracture surface, with minute irregularities, of a sample of aluminum, as in Claim 8.

Hence, no combination of Nichani and Tobin in view of Oguma could disclose or suggest detecting non-metallic inclusions in a fracture surface, with minute irregularities, of a sample of aluminum, as in Claim 8.

For each of the above reasons, therefore, Claim 8 and all claims which depend on Claim 8 are patentable over the cited art. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection of Claims 8, 11, 13, 14, and 16.

DEPENDENT CLAIMS

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicant's silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (1) are in proper form, (2) are neither obvious nor anticipated by the relied upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below to the United States Patent and Trademark Office.


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